

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement and Compliance Assurance
Office of Criminal Enforcement, Forensics and Training

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LABORATORY REPORT

Tonawanda Coke Clean Air Act Investigation
Tonawanda, New York
NEIC Project Number: VP0842

June 2009

Principal Analytical Chemist:

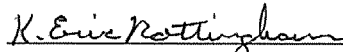


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APPENDIX

A	Chain-of-Custody Records (6 pages)
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**The contents page shows all the sections contained in this report
and provides a clear indication of the end of this report.**

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LABORATORY ACTIVITIES**SAMPLE RECEIPT AND DESCRIPTIONS**

On April 17 and 21, 2009, the U.S. Environmental Protection Agency (EPA) National Enforcement Investigations Center (NEIC) laboratory received 34 wastewater samples and 3 trip blanks, 3 tar and 3 sludge (total of 6 hydrocarbon) samples, and 12 air canister samples with 2 canister blanks from the Tonawanda Coke Corporation investigation. A copy of the chain-of-custody record is attached as **Appendix A**. The samples were maintained under custody in accordance with the NEIC Evidence Management Procedure, NEICPROC/00-059R2.

TESTING AND RESULTS

Table 1 lists the analysts and the analytical procedures used to detect and measure the target volatile organic compounds of benzene, toluene, ethylbenzene, xylenes (BTEX) and naphthalene. Styrene and dichlorodifluoromethane were also identified in some of the air canister samples.

NEIC personnel conducted all analyses in accordance with the NEIC quality system during April and May 2009. Data quality summaries for all laboratory measurements are maintained in the project file. Sample description and date information listed in tables 2, 3, and 4 are from the chain-of-custody records, and the quantitation limits were calculated from the lowest calibration standard and sample volume used for each analysis.

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Table 1

ANALYTICAL PROCEDURES AND ANALYSTS
Tonawanda Coke Corporation
Tonawanda, New York

Analytical Method/Procedures	Analysts
Wastewater: <ul style="list-style-type: none">EPA SW-846 Method 5030B, Purge-and-Trap for Aqueous SamplesEPA SW-846 Method 8260C, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)Volatile Organic Analysis by Gas Chromatography/Mass Spectrometry, NEICPROC/00-002R3	Tam Talarski
Hydrocarbons (Tar/Sludge): <ul style="list-style-type: none">EPA SW-846 Method 3585, Waste Dilution for Organic CompoundsEPA SW-846 Method 5030B, Purge-and-Trap for Aqueous SamplesEPA SW-846 Method 8260C, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)Volatile Organic Analysis by Gas Chromatography/Mass Spectrometry, NEICPROC/00-002R3	Jing-Fen Chen
Air Canister Samples: <ul style="list-style-type: none">Gas Phase Testing for Organic Contaminants, NEICPROC/00-0011R4EPA Compendium Method TO-15, Determination of Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry	Bob Bohn

Wastewater Analyses

The samples and trip blanks were analyzed for BTEX and naphthalene. Five milliliters of each sample, or an aliquot from each sample diluted in deionized water, were analyzed for BTEX and naphthalene by purge-and-trap gas chromatography/mass spectrometry (GC/MS). Table 2 contains the analytical results for the wastewater samples.

Wastewater Data Quality Summary

BTEX and naphthalene were not identified in the laboratory deionized water blanks or the trip blanks at levels exceeding the quantitation limits.

The analytical measurement uncertainty estimate for the reported results was based on an evaluation of all quality control (QC) data. There was no indication of analytical measurement bias, and an estimate of the random error associated with the data was calculated from quality control specifications (75 to 125 percent of the known value for QC samples). Using a uniform distribution model, the relative standard uncertainty associated with the results was 14.4 percent.

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Table 2

WASTEWATER SAMPLE ANALYTICAL RESULTS

Tonawanda Coke Corporation

Tonawanda, New York

NEIC Station Number	Sample Description			
NEIC Tag Number	Date Collected	Compound	Concentration (mg/L) ¹	Quantitation Limit (mg/L)
Station 01	Ammonia stripper inlet	Benzene	3.50	0.20
NE-25313	4/15/2009	Ethylbenzene	< QL	0.033
NE-25314		Naphthalene	13.8	0.20
		Toluene	0.757	0.20
		<i>m- &/or p</i> -Xylene	0.120	0.033
		<i>o</i> -Xylene	0.0447	0.033
Station 01 ²	Ammonia stripper inlet	Benzene	3.69	0.10
NE-25334	4/16/2009	Ethylbenzene	< QL	0.10
		Naphthalene	18.6	1.0
		Toluene	0.659	0.10
		<i>m- &/or p</i> -Xylene	0.112	0.10
		<i>o</i> -Xylene	< QL	0.10
Station 01 ²	Ammonia stripper inlet	Benzene	3.97	0.071
NE-25335	4/16/2009	Ethylbenzene	< QL	0.071
		Naphthalene	22.6	1.0
		Toluene	0.647	0.071
		<i>m- &/or p</i> -Xylene	0.106	0.071
		<i>o</i> -Xylene	< QL	0.071
Station 01 ²	Ammonia stripper inlet	Benzene	3.85	0.071
NE-25336	4/16/2009	Ethylbenzene	< QL	0.071
		Naphthalene	21.6	1.0
		Toluene	0.656	0.071
		<i>m- &/or p</i> -Xylene	0.109	0.071
		<i>o</i> -Xylene	< QL	0.071
Station 01	Ammonia stripper inlet	Benzene	4.23	0.10
NE-25427	4/20/2009	Ethylbenzene	< QL	0.050
NE-25428		Naphthalene	10.4	0.25
		Toluene	0.570	0.10
		<i>m- &/or p</i> -Xylene	0.0830	0.050
		<i>o</i> -Xylene	< QL	0.050
Station 02	Coke oven drip leg to boiler	Benzene	33.9	1.0
NE-25316	4/15/2009	Ethylbenzene	< QL	0.20
NE-25317		Naphthalene	438	5.0
		Toluene	4.60	0.20
		<i>m- &/or p</i> -Xylene	0.761	0.20
		<i>o</i> -Xylene	0.317	0.20
Station 02	Coke oven drip leg to boiler	Benzene	20.8	0.50
NE-25342	4/16/2009	Ethylbenzene	< QL	0.25
NE-25343		Naphthalene	278	5.0
		Toluene	3.12	0.50
		<i>m- &/or p</i> -Xylene	0.450	0.25
		<i>o</i> -Xylene	< QL	0.25

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Table 2

WASTEWATER SAMPLE ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	Sample Description Date Collected	Compound	Concentration (mg/L) ¹	Quantitation Limit (mg/L)
Station 02 ² NE-25408	Coke oven drip leg to boilerhouse 4/20/2009	Benzene	19.5	0.33
		Ethylbenzene	< QL	0.33
		Naphthalene	142	5.0
		Toluene	3.31	0.33
		<i>m- &/or p</i> -Xylene	0.477	0.33
		<i>o</i> -Xylene	< QL	0.33
Station 02 ² NE-25409	Coke oven drip leg to boilerhouse 4/20/2009	Benzene	22.1	0.50
		Ethylbenzene	< QL	0.50
		Naphthalene	106	5.0
		Toluene	3.52	0.50
		<i>m- &/or p</i> -Xylene	0.501	0.50
		<i>o</i> -Xylene	< QL	0.50
Station 02 ² NE-25410	Coke oven drip leg to boilerhouse 4/20/2009	Benzene	23.6	0.33
		Ethylbenzene	< QL	0.33
		Naphthalene	134	2.0
		Toluene	3.85	0.33
		<i>m- &/or p</i> -Xylene	0.509	0.33
		<i>o</i> -Xylene	< QL	0.33
Station 03 NE-25319 NE-25320	Surge tank effluent 4/15/2009	Benzene	6.43	0.50
		Ethylbenzene	< QL	0.063
		Naphthalene	57.8	1.0
		Toluene	1.12	0.063
		<i>m- &/or p</i> -Xylene	0.219	0.063
		<i>o</i> -Xylene	0.0762	0.063
Station 03 NE-25345 NE-25346	Surge tank effluent 4/16/2009	Benzene	5.09	0.10
		Ethylbenzene	< QL	0.10
		Naphthalene	30.9	1.2
		Toluene	0.891	0.10
		<i>m- &/or p</i> -Xylene	0.165	0.10
		<i>o</i> -Xylene	< QL	0.10
Station 03 NE-25398 NE-25399	Surge tank effluent 4/20/2009	Benzene	8.27	0.10
		Ethylbenzene	< QL	0.10
		Naphthalene	25.0	1.0
		Toluene	1.54	0.10
		<i>m- &/or p</i> -Xylene	0.268	0.10
		<i>o</i> -Xylene	< QL	0.10
Station 04 NE-25322 NE 25323	BH moat 4/15/2009	Benzene	0.581	0.025
		Ethylbenzene	< QL	0.025
		Naphthalene	4.56	0.20
		Toluene	0.154	0.025
		<i>m- &/or p</i> -Xylene	0.0451	0.025
		<i>o</i> -Xylene	< QL	0.025

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Table 2

WASTEWATER SAMPLE ANALYTICAL RESULTS

Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number	Sample Description			
NEIC Tag Number	Date Collected	Compound	Concentration (mg/L)'	Quantitation Limit (mg/L)
Station 04 NE-25348 NE-25349	BH moat 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	0.431 < QL 3.34 0.0852 0.0178 < QL	0.025 0.010 0.20 0.025 0.010 0.010
Station 04 NE-25404 NE-25405	BH moat 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	0.458 < QL 3.11 0.100 0.0268 < QL	0.013 0.013 0.10 0.013 0.013 0.013
Station 05 NE-25325 NE-25326	Drip leg downstream of tar precip. 4/15/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	27.2 < QL 49.2 4.80 0.986 0.313	1.0 0.12 1.0 0.12 0.12 0.12
Station 05 NE 25351 NE 25352	Drip leg downstream of tar precip. 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	30.9 < QL 23.0 4.80 0.969 0.300	0.67 0.10 0.67 0.67 0.10 0.10
Station 05 NE-25415	Drip leg downstream of tar precip. 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	27.9 < QL 39.0 5.06 0.934 0.317	0.50 0.12 0.50 0.50 0.12 0.12
Station 08 NE-25337	Ammonia stripper effluent 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	< QL < QL 0.00271 < QL < QL < QL	0.0017 0.0017 0.0017 0.0017 0.0017 0.0017
Station 09 NE-25354 NE-25355	Tar decanter liquor 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	3.61 < QL 10.3 0.610 0.0732 < QL	0.50 0.042 0.50 0.042 0.042 0.042

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Table 2

WASTEWATER SAMPLE ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	Sample Description Date Collected	Compound	Concentration (mg/L) ¹	Quantitation Limit (mg/L)
Station 09 NE-25412 NE-25413	Tar decanter liquor 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	4.96 < QL 21.6 0.771 0.103 < QL	0.25 0.063 0.25 0.063 0.063 0.063
Station 10 NE-25357 NE-25358	Ammonia removal system sump 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	5.92 < QL 27.6 0.934 0.161 < QL	0.10 0.10 0.50 0.10 0.10 0.10
Station 10 NE-25425	Ammonia removal system sump 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	2.46 < QL 447 0.340 < QL < QL	0.10 0.10 5.0 0.10 0.10 0.10
Station 11 NE-25360 NE-25361	Downcomer sump 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	6.52 < QL 19.4 1.22 0.268 0.0998	0.50 0.050 1.0 0.050 0.050 0.050
Station 11 ² NE-25419 NE-25420	Downcomer sump 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	11.8 < QL 36.0 2.51 0.639 0.216	0.12 0.12 1.0 0.12 0.12 0.12
Station 12 ² NE-25363	Tar precip. sump 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	1.51 < QL 17.8 0.380 0.0633 < QL	0.063 0.063 1.0 0.063 0.063 0.063
Station 12 ² NE-25364	Tar precip. sump 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	1.86 < QL 20.3 0.536 0.0939 < QL	0.071 0.071 1.0 0.071 0.071 0.071

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Table 2

WASTEWATER SAMPLE ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	Sample Description Date Collected	Compound	Concentration (mg/L) ¹	Quantitation Limit (mg/L)
Station 12 ² NE-25365	Tar precip. sump 4/16/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	1.79 < QL 22.0 0.524 0.0987 < QL	0.050 0.050 1.0 0.050 0.050 0.050
Station 12 NE-25421 NE-25422	Tar precip. sump 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	0.810 < QL 14.9 0.247 0.0549 < QL	0.050 0.050 0.50 0.050 0.050 0.050
Station 13 NE-25393	Quench water makeup 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	< QL < QL < QL < QL < QL < QL	0.0010 0.0010 0.0010 0.0010 0.0010 0.0010
Station 14 NE-25396	Quench sump 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	< QL < QL < QL < QL < QL < QL	0.0010 0.0010 0.0010 0.0010 0.0010 0.0010
Station 15 NE-25402	Plate cooler NCCW 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	< QL < QL < QL < QL < QL < QL	0.0010 0.0010 0.0010 0.0010 0.0010 0.0010
Station 17 NE-25431	Lagoon inlet 4/20/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	0.00158 < QL 0.00132 < QL < QL < QL	0.0010 0.0010 0.0010 0.0010 0.0010 0.0010
Trip Blank NE-25328	Blanks 4/15/2009	Benzene Ethylbenzene Naphthalene Toluene <i>m- &/or p</i> -Xylene <i>o</i> -Xylene	< QL < QL < QL < QL < QL < QL	0.0010 0.0010 0.0010 0.0010 0.0010 0.0010

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Table 2

WASTEWATER SAMPLE ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	Sample Description Date Collected	Compound	Concentration (mg/L) ¹	Quantitation Limit (mg/L)
Trip Blank NE-25368	Blanks 4/16/2009	Benzene	< QL	0.0010
		Ethylbenzene	< QL	0.0010
		Naphthalene	< QL	0.0010
		Toluene	< QL	0.0010
		<i>m- &/or p</i> -Xylene	< QL	0.0010
		<i>o</i> -Xylene	< QL	0.0010
Trip Blank NE-25432	Blanks 4/20/2009	Benzene	< QL	0.0010
		Ethylbenzene	< QL	0.0010
		Naphthalene	< QL	0.0010
		Toluene	< QL	0.0010
		<i>m- &/or p</i> -Xylene	< QL	0.0010
		<i>o</i> -Xylene	< QL	0.0010

¹ < QL indicates that the compound was not identified at levels above the indicated quantitation limit.² Field replicate.³ The reported result for each analyte is the average of three measurements.**Hydrocarbon (Tar/Sludge) Analyses**

An aliquot from the hydrocarbon samples diluted in methanol was analyzed for BTEX and naphthalene by purge-and-trap GC/MS. Table 3 contains the analytical results for the hydrocarbon samples.

Hydrocarbon Data Quality Summary

Neither BTEX nor naphthalene was identified in the laboratory methanol blanks at levels exceeding the quantitation limit [0.1 milligram per liter (mg/L)].

The analytical measurement uncertainty estimate for the reported results was based on an evaluation of all QC data. There was no indication of analytical measurement bias, and an estimate of the random error associated with the data was calculated from QC specifications (80 to 120 percent of the known value for QC samples). Using a uniform distribution model, the relative standard uncertainty associated with the results was 11.5 percent.

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Table 3

HYDROCARBON SAMPLE ANALYTICAL RESULTS

Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number	Sample Description	Compound	Concentration	Quantitation Limit
NEIC Tag Number	Date Collected			
Station 06'	Tar decanter tar	Benzene	995 mg/L	250 mg/L
NE-25330	4/15/2009	Naphthalene	58,500 mg/L	1,000 mg/L
		Toluene	781 mg/L	250 mg/L
		<i>m- &/or p</i> -Xylene	567 mg/L	250 mg/L
		<i>o</i> -Xylene	< QL	250 mg/L
Station 06	Tar decanter tar	Benzene	901 mg/L	250 mg/L
NE-25370	4/16/2009	Naphthalene	52,700 mg/L	1,000 mg/L
		Toluene	699 mg/L	250 mg/L
		<i>m- &/or p</i> -Xylene	503 mg/L	250 mg/L
		<i>o</i> -Xylene	< QL	250 mg/L
Station 06	Tar decanter tar	Benzene	1,010 mg/L	250 mg/L
NE-25388	4/20/2009	Naphthalene	62,600 mg/L	1,000 mg/L
		Toluene	807 mg/L	250 mg/L
		<i>m- &/or p</i> -Xylene	551 mg/L	250 mg/L
		<i>o</i> -Xylene	< QL	250 mg/L
Station 07	Tar decanter sludge	Benzene	434 mg/kg	125 mg/kg
NE-25332	4/15/2009	Naphthalene	30,000 mg/kg	500 mg/kg
		Toluene	368 mg/kg	125 mg/kg
		<i>m- &/or p</i> -Xylene	281 mg/kg	125 mg/kg
		<i>o</i> -Xylene	< QL	125 mg/kg
Station 07'	Tar decanter sludge	Benzene	388 mg/kg	125 mg/kg
NE-25372	4/16/2009	Naphthalene	23,900 mg/kg	500 mg/kg
NE-25373		Toluene	352 mg/kg	125 mg/kg
		<i>m- &/or p</i> -Xylene	254 mg/kg	125 mg/kg
		<i>o</i> -Xylene	< QL	125 mg/kg
Station 07	Tar decanter sludge	Benzene	314 mg/kg	125 mg/kg
NE-25390	4/20/2009	Naphthalene	18,900 mg/kg	500 mg/kg
		Toluene	255 mg/kg	125 mg/kg
		<i>m- &/or p</i> -Xylene	182 mg/kg	125 mg/kg
		<i>o</i> -Xylene	< QL	125 mg/kg

¹ The reported result for this sample is the average of three analytical measurements.**Volatile Organics in Air**

Analytical results for TO-15 volatile organic compounds, including naphthalene, are summarized in Table 4. The reported values are from single measurements unless otherwise noted.

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Volatile Organics in Air Data Quality Summary

No reported compounds were identified in the laboratory nitrogen blanks at levels exceeding the quantitation limits [1 to 5 parts per billion by volume (ppbv)].

The analytical measurement uncertainty estimate for the reported results was based on an evaluation of all QC data. There was no indication of analytical measurement bias, and an estimate of the random error associated with the data was calculated from quality control specifications (60 to 140 percent of the known value for QC samples). Using a uniform distribution model, the relative standard uncertainty associated with the results was 23.1 percent.

Table 4

VOLATILE ORGANICS IN AIR ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	NEIC Station Location	Date Collected (time) Canister Number	Compound	Concentration ¹ (ppbv)	Quantitation Limit (ppbv)
01A NE-25374	Ammonia stripper inlet	4/16/09 (11:12a) 1160	Benzene	25.5	1.20
			Ethylbenzene	< QL	1.18
			Naphthalene	18.6	6.13
			Styrene	< QL	1.21
			Toluene	11.9	1.19
			<i>m</i> -&/or <i>p</i> -Xylene	3.45	2.40
			<i>o</i> -Xylene	< QL	1.21
02A NE-25375	Coke oven drip leg to boiler	4/16/09 (11:25a) 1241	Benzene	76.2	7.25
			Ethylbenzene	< QL	4.70
			Naphthalene	46.0	12.5
			Styrene	< QL	4.85
			Toluene	10.1	7.17
			<i>m</i> -&/or <i>p</i> -Xylene	< QL	9.60
			<i>o</i> -Xylene	< QL	4.85
03A NE-25376	Surge tank effluent	4/16/09 (11:33a) 1221	Benzene	87.9	6.40
			Ethylbenzene	< QL	3.13
			Naphthalene	112	11.0
			Styrene	3.51	3.23
			Toluene	16.0	3.17
			<i>m</i> -&/or <i>p</i> -Xylene	< QL	6.40
			<i>o</i> -Xylene	< QL	3.23
04A NE-25377	BH moat	4/16/09 (11:45a) 1235	Benzene	4.12	1.20
			Ethylbenzene	< QL	1.18
			Naphthalene	39.7	8.78
			Styrene	< QL	1.21
			Toluene	< QL	1.19
			<i>m</i> -&/or <i>p</i> -Xylene	< QL	2.40
			<i>o</i> -Xylene	< QL	1.21

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Table 4

VOLATILE ORGANICS IN AIR ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	NEIC Station Location	Date Collected (time) Canister Number	Compound	Concentration ¹ (ppbv ²)	Quantitation Limit (ppbv)
05A NE-25378	Drip leg downstream of tar precipitator	4/16/09 (11:52a) 1155	Benzene Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	13.2 < QL 49.4 1.73 6.15 < QL < QL	1.20 1.18 8.23 1.21 1.19 2.40 1.21
06A NE-25379	Tar decanter tar	4/16/09 (12:10p) 1167	Benzene ³ Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	1,580 < QL < QL < QL 279 < QL < QL	480 235 826 243 238 480 243
10A NE-25380	Ammonia removal system sump	4/16/09 (12:38p) 00124	Benzene ³ Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	3,410 < QL 1,100 85.2 463 87.1 < QL	480 23.5 125 24.3 23.8 48.0 24.3
11A NE-25383	Downcomer sump	4/16/09 (12:45p) 00120	Benzene Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	1,240 < QL < QL < QL 144 < QL < QL	120 118 276 122 119 241 122
12A NE-25381	Tar precipitator sump	4/16/09 (12:55p) 00126	Benzene Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	3,670 < QL < QL < QL 1,820 < QL < QL	241 236 414 243 238 481 243
15A NE-25384	South end of exhauster #2	4/20/09 (11:14a) 1220	Benzene ³ Ethylbenzene Naphthalene ³ Styrene Toluene ³ <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	157 < QL 88.4 < QL 33.8 < QL < QL	9.60 9.40 16.5 9.70 9.50 19.2 9.70

ENFORCEMENT CONFIDENTIAL

Table 4

VOLATILE ORGANICS IN AIR ANALYTICAL RESULTS
Tonawanda Coke Corporation
Tonawanda, New York

NEIC Station Number NEIC Tag Number	NEIC Station Location	Date Collected (time) Canister Number	Compound	Concentration ¹ (ppbv ²)	Quantitation Limit (ppbv)
16A NE-25385	North end of exhauster shed between #2 and #3	4/20/09 (11:15a) 1249	Benzene Dichlorodifluoromethane ⁴ Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	73.8 89.9 < QL 47.0 < QL 15.8 < QL < QL	4.80 5.25 4.70 8.25 4.85 4.75 9.60 4.85
17A NE-25386	Lagoon outlet	4/20/09 (3:45p) 1161	Benzene Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	< QL < QL 18.5 < QL < QL < QL < QL	9.60 9.40 16.5 9.70 9.50 19.2 9.70
NE-25382	Background	4/16/09 (5:10p) 1172	Benzene Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	< QL < QL < QL < QL < QL < QL < QL	1.20 1.18 41.3 1.21 1.19 2.40 1.21
NE-25387	Blank	4/20/09 (5:05p) 1239	Benzene Ethylbenzene Naphthalene Styrene Toluene <i>m</i> -&/or <i>p</i> -Xylene <i>o</i> -Xylene	< QL < QL < QL < QL < QL < QL < QL	1.20 1.18 2.06 1.21 1.19 2.40 1.21

¹ < QL indicates that the compound was not detected at or above the quantitation limit indicated.² Parts per billion by volume.³ Value is an average of three subsamples from one canister (n=3).⁴ Also known as Freon-12 or R-12.

APPENDIX A
CHAIN-OF-CUSTODY RECORD
(6 pages)

ENVIRONMENTAL PROTECTION AGENCY
 Office of Enforcement and Compliance Monitoring

CHAIN OF CUSTODY RECORD

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
 Building 53, Box 25227, Denver Federal Center
 Denver, Colorado 80225

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS	TAG NUMBERS	REMARKS
STA. NO.	DATE	TIME	STATION LOCATION			
P 0842		Tonawanda Coke Corp. - Tonawanda, NY				
SAMPLERS: (Signature) <i>in Dewey</i>						
01	09/15/09	07:50a	X	Ammonia Shipper Inlet	NE-25313, NE-25314, NE-25315	RLB HCL & Ice
02	09/15/09	10:05a	X	Coke Oven Drivleg to Boiler	NE-25316, NE-25317, NE-25318	RLB
03	09/15/09	10:15a	X	Surge Tank Effluent	NE-25319, NE-25320, NE-25321	RLB
04	09/15/09	10:40a	X	Blk Inlet	NE-25322, NE-25323, NE-25324	RLB
05	09/15/09	11:05a	X	Drivleg Downstream of Tar Precip.	NE-25325, NE-25326, NE-25327	RLB
	09/15/09		X	Blanks	NE-25328, NE-25329	RLB HCL & Ice
Relinquished by: (Signature) <i>Ward</i> Date / Time 4/16/09 1730 Received by: (Signature) Received for Laboratory by: (Signature) 4-17-09 0945 hrs						
Relinquished by: (Signature) Date / Time Relinquished by: (Signature) Date / Time Received by: (Signature)						
Relinquished by: (Signature) Date / Time Received for Laboratory by: (Signature) 4-17-09 0945 hrs						
Remarks FedEx Airbill # 8684 07305015 4/13/09 Samples were received intact, iced and custody locked.						

* U.S. GOVERNMENT PRINTING OFFICE: 1986-773-427

N 12819

NEICVP0842E01

Appendix A
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Tonawanda Coke Corp.

TCC-00202742

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement and Compliance Monitoring

CHAIN OF CUSTODY RECORD

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
Building 53, Box 25227, Denver Federal Center
Denver, Colorado 80225

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	40 mL VOA	20 mL	TAG NUMBERS	SAMPLE TAG VERIFICATION	REMARKS
WP0842	Tonawanda Coke Corp. - Tonawanda, NY						
SAMPLERS: (Signature) <i>[Signature]</i>							
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION		
01	04/10/09	11:00a	X	X	Ammonia Stripper Inlet	NE-25334, 25335, 25336, 25340, 25341	HCl & Ice
08	1	11:05a	X	X	Ammonia Stripper Effluent	NE-25337, 25338, 25339	
02	1	11:20a	X	X	Coke Oven Drip Leg to Boiler	NE-25342, 25343, 25344	
03	1	11:30a	X	X	Surge Tank Effluent	NE-25345, 25346, 25347	
04	1	11:40a	X	X	BH Moist	NE-25348, 25349, 25350	
05	1	11:50a	X	X	Drip Leg Downstream of Tar Precip	NE-25351, 25352, 25353	
09	1	11:55a	X	X	Tar Decanter Liquor	NE-25354, 25355, 25356	
10	1	12:35p	X	X	Ammonia Removal System Sump	NE-25357, 25358, 25359	
11	1	12:40p	X	X	Downcomer Sump	NE-25360, 25361, 25362	
12	1	12:50p	X	X	Tar Precip. Sump	NE-25363, 25364, 25365	
			X	X	Blanks	NE-25366, 25367	
Relinquished by: (Signature) <i>[Signature]</i> Date / Time 4/16/09/1730 Received by: (Signature) <i>[Signature]</i> Relinquished by: (Signature) <i>[Signature]</i> Date / Time 4-17-09 0945 hrs Received by: (Signature) <i>[Signature]</i>							
Relinquished by: (Signature) <i>[Signature]</i> Date / Time 4-17-09 0945 hrs Received by: (Signature) <i>[Signature]</i>							
Relinquished by: (Signature) <i>[Signature]</i> Date / Time 4-17-09 0945 hrs Received by: (Signature) <i>[Signature]</i>							

Distribution: Original Accompanies Shipment. Copy to Coordinator Field Files

Remarks FedEx Airbill # 8684 07305015
Samples were received intact, iced and
Custody locked.

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Tonawanda Coke Corp.

TCC-00202743

ENFORCEMENT CONFIDENTIAL

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement and Compliance Monitoring

CHAIN OF CUSTODY RECORD

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
Building 53, Box 25227, Denver Federal Center
Denver, Colorado 80225

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	TAG NUMBERS	SAMPLE TAG VERIFICATION	REMARKS
VP0842	Tonawanda Coke Corp - Tonawanda, NY				
SAMPLERS: (Signature) <i>for [illegible]</i>					
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION
13	10/20/09	10:10a	X	X	Quench Water Make-Up
14	10/20/09	10:20a	X	X	Quench Slurry
03	10/30/09	10:30a	X	X	Sludge Tank Effluent
15	10/30/09	10:35a	X	X	Plate Cooler NCCIO
04	10/40/09	10:40a	X	X	BH Moist
02	10/45/09	10:45a	X	X	Coke Oven Drip leg to Boilerhouse
09	10/55/09	10:55a	X	X	Tar Decanter Liquor
05	11/20/09	11:20a	X	X	Drip leg Downstream of Tar Heap
11	11/23/09	11:23a	X	X	Downcomer Slurry
12	11/30/09	11:30a	X	X	Tar Precipitator Slurry
10	11/35/09	11:35a	X	X	Ammonia Removal System Slurry
01	11/42/09	11:42a	X	X	Ammonia Stripper Inlet
17	3/4/09	3:40p	X	X	Lagoon Inlet
			X	X	Blanks
Relinquished by: (Signature) <i>[illegible]</i> Date / Time 4/20/09 5:30 PM Received by: (Signature) <i>[illegible]</i>					
Relinquished by: (Signature) <i>[illegible]</i> Date / Time Received by: (Signature)					
Relinquished by: (Signature) Date / Time Received for Laboratory by: (Signature) <i>[illegible]</i>					
Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files					
* U.S. GOVERNMENT PRINTING OFFICE: 1986-773-427					

NEICVP0842E01

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Tonawanda Coke Corp.

TCC-00202744

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
Building 53, Box 25227, Denver Federal Center

TCC-00202745

12826

ENVIRONMENTAL PROTECTION AGENCY
 Office of Enforcement and Compliance Monitoring

CHAIN OF CUSTODY RECORD

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
 Building 53, Box 25227, Denver Federal Center
 Denver, Colorado 80225

PROJ. NO. PROJECT NAME		SAMPLERS: (Signature)		NO. OF CONTAINERS		TAG NUMBERS		REMARKS	
STA. NO.	DATE TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TAG NUMBERS	SAMPLE TAG VERIFICATION	REMARKS	
VP 0842	Tonawanda Coke Corp. - Tonawanda, NY								
01A	04/16/09 11:12a	X		Ammonia Shipper Inlet	1	NE-25374	RR	1160	
02A	11:25a	X		Coke Oven Hipleg to Boilerhouse	1	NE-25375	RR	1241	
03A	11:33a	X		Surge Tank Effluent	1	NE-25376	RR	1221	
04A	11:45a	X		Blt Moist	1	NE-25377	RR	1235	
05A	11:52a	X		Hipleg Mainstream of Tar Recip	1	NE-25378	RR	125	
06A	12:10p	X		Tar Recip Tank	1	NE-25379	RR	1167	
10A	12:38p	X		Ammonia Removal System Sump	1	NE-25380	RR	00124	
12A	12:55p	X		Tar Recip Tank Sump	1	NE-25381	RR	00126	
	04/16/09 5:10p	X		Background	1	NE-25382	RR	1172	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time		Received by: (Signature)	
VP 0842		4/16/09 1730							
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks	
				4-17-09 0945 hr				Samples were received intact and custody locked.	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

* U.S. GOVERNMENT PRINTING OFFICE: 1986-779-427

N 12822

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Tonawanda Coke Corp.

TCC-00202746

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement and Compliance Monitoring

CHAIN OF CUSTODY RECORD

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
Building 53, Box 25227, Denver Federal Center
Denver, Colorado 80225

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	TAG NUMBERS	REMARKS					
VP0842	Tonawanda Coke Corp. - Tonawanda, NY								
SAMPLERS: (Signature) <i>W. J. ...</i>									
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	TAG NUMBERS	REMARKS	
15A	04/20/09	11:42a	X		South End of Exhauster #2	1		NE-25384	RRS Canister #1220
16A	11/15a		X		North End of Exhauster Shed Between #2 & #3	1		NE-25385	RRS Canister #1249
17A	3:45p		X		Lagoon Outlet	1		NE-25386	RRS Canister #1161
	5:05p		X		Blank	1		NE-25387	RRS Canister #1239
11A	04/16/09	12:45p	X		Downcomer Sump	1		NE-25383	RRS Canister #00120
Relinquished by: (Signature) <i>W. J. ...</i> Date / Time 4/20/09 5:30pm Received by: (Signature) <i>Robert Ashby</i>									
Relinquished by: (Signature) <i>W. J. ...</i> Date / Time 4-21-09 09:42hr Received by: (Signature) <i>Robert Ashby</i>									
Relinquished by: (Signature) <i>W. J. ...</i> Date / Time 4-21-09 09:42hr Received by: (Signature) <i>Robert Ashby</i>									
Remarks: FedEx Airbill # 8631 8804 4382 4-28-09 Samples were received intact and custody locked.									

* U.S. GOVERNMENT PRINTING OFFICE: 1986-773-427

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NEICVP0842E01

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Tonawanda Coke Corp.

TCC-00202747

015.02.003
GOVERNMENT
EXHIBIT
1:10-cr-00219





015.02.012
GOVERNMENT
EXHIBIT
1:10-cr-00219

Exhibit 10

TCC-00217420

015.02.012-0001



015.02.015
GOVERNMENT
EXHIBIT
1:10-cr-00219

Exhibit 11

TCC-00217423

015.02.015-0001



015.02.101
GOVERNMENT
EXHIBIT
1:10-cr-00219

Exhibit 12

TCC-00217509

015.02.101-0001